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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/808,236	03/24/2004	Takeshi Morikawa	1109.70145	5009
7590 Patrick G. Burns, Esq. GREER, BURNS & CRAIN, LTD. Suite 2500 300 South Wacker Dr. Chicago, IL 60606			EXAMINER RICKMAN, HOLLY C	
			ART UNIT 1794	PAPER NUMBER
			MAIL DATE 07/21/2008	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/808,236

**Applicant(s)**

MORIKAWA ET AL.

**Examiner**

Holly Rickman

**Art Unit**

1794

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 April 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1, 3-9 and 14-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 3-9, 14-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102/103***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 3, 5, 9, and 14-18 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over JP 08-227541.

JP 8-227541 discloses a magneto-optical recording medium having a substrate, a SiN underlayer, a Pt layer, a Co layer and multiple alternating addition layers of Pt and Co. The SiN layer corresponds to the claimed first foundation layer. The first Pt layer deposited thereon corresponds to the claimed initial layer. The first Co layer thereon corresponds to the claimed functional layer and would be considered to be a soft magnetic layer and/or a heat sink layer as required by claim 3. The next laminated Pt layer corresponds to the claimed second foundation layer and the Co layer thereon corresponds to the roughness controlling layer. The additional overlying Pt/Co layers corresponds to the claimed recording layer. The structure has perpendicular magnetic anisotropy. See abstract, Figures and paragraphs [0007]-[0019].

The reference does not disclose the claim limitations directed to the relative surface tensions of the initial layer and the roughness controlling layer. The examiner takes the position that the reference to JP 08-227541 discloses the same structure as claimed and the use of the same materials *as claimed*, and therefore, would be expected to exhibit the claimed properties.

It has been held that where claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes, the burden of proof is shifted to applicant to show that prior art products do not necessarily or inherently possess characteristics of claimed products where the rejection is based on inherency under 35 USC §102 or on prima facie obviousness under 35 USC §103, jointly or alternatively. *In re Best, Bolton, and Shaw*, 195 USPQ 430. (CCPA 1977).

#### ***Claim Rejections - 35 USC § 103***

4. Claims 1 and 3-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohno (US 6596366).

Ohno discloses a magneto-optical recording medium having a substrate, a grain size controlling layer, a reflective layer, a protective layer and a recording layer thereon. The grain size controlling layer (see "6" in Fig 1) corresponds to the claimed first foundation layer. The lowermost strata of the reflective layer ("5" in Fig 1) corresponds to the claimed initial layer. The middle strata correspond to the claimed functional layer and the second foundation layer thereon. The uppermost strata corresponds to the claimed roughness controlling layer.

The reference teaches a grain size controlling layer (first foundation layer) formed from Al-O (col. 6, line 49-52) which is one of the materials exemplified in Applicant's specification.

Art Unit: 1794

Ohno teaches that the material for the reflective layer (initial layer/functional/second foundation and roughness controlling layers) is a material selected from Ag, Au, Al Cu or the like (see col. 7, lines 38-50). It would have been obvious to one of ordinary skill in the art at the time of invention to choose to use a Au reflective layer in combination with an underlying Al-O foundation layer in view of the apparent functional equivalence of each of the reflective layer materials. Au inherently satisfies the claim limitation requiring a surface tension greater than that of the foundation layer. Applicant's specification provides support for the position that an Al-O layer and Au layer meet this claimed surface tension relationship.

As for the roughness controlling layer (uppermost portion of the reflective layer taught by Ohno), the reference teaches the use of nonmagnetic materials such as SiO<sub>2</sub> and ZnS having a layer thickness of as high as 500 nm with 200 nm being a preferred value (see col. 9, lines 21-62). It would have been obvious to choose a layer thickness from within the disclosed range in view of the apparent equivalence of all thicknesses disclosed.

The reflective layer has a preferred surface roughness Ra of 0-2 nm (see col. 8, lines 16-29). It would have been obvious to one of ordinary skill in the art at the time of invention to choose an optimal roughness value from within the range of 0-2 nm in order to achieve a high degree of surface smoothness. It has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

The magneto-optical structure taught by Ohno meets the intended use recitation of claim 9.

***Response to Arguments***

5. Applicant's arguments filed 4/21/08 have been fully considered but they are not persuasive. Applicant has added new limitations to claims 1 and 3-9 and has added new claims 14-18.

Applicant argues that claims 1 and 3-9 are patentable over Ohno because Ohno fails to teach the claimed first and second foundation layers "wherein the second foundation layer is spaced from the first foundation layer at least by as much as a combined thickness of the initial layer and the functional layer." The examiner maintains that this limitation is met for the above noted reasons.

The examiner also notes that the Patent Office does not have the capacity to test prior art references to determine whether they meet any claimed property recitations. However, the examiner maintains that the claimed properties would be expected to be inherent in the structure taught by Ohno by virtue of the fact that Ohno has layers corresponding to the claimed ordering of layers that are formed of the materials that are set forth in claims 1 and 3-9. The examiner notes that no specific layer compositions are required in claims 1 and 3-9. Thus, the claimed layers could presumably be formed from multiple layers of identical materials. For this reason, the examiner maintains that the reflective layer taught by Ohno corresponds to multiple claimed layers.

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Holly Rickman whose telephone number is (571) 272-1514. The examiner can normally be reached on Monday-Friday 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on (571) 272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Holly Rickman/  
Primary Examiner  
Art Unit 1794